RUDRAPRASAD CONSULTANTS

NAME OF WORK: Construction of Synthetic Tennis Court, Street Vending Zone & Other Developmental Works at Judicial Layout Main and Cross Roads, Chikkabommasandra, Someshwara Nagar, Allalasandra Village and Surrounding Areas in Ward No. 04 of Yelahanka Division under Amruth Nagarothan Grants. (PACKAGE No – 06)

DETAILED PROJECT REPORT

SUBMITTED TO B.B.M.P, BANGALORE

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BRUHAT BENGALURU MAHANAGARA PALIKE

DETAIL PROJECT REPORT

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RUDRAPRASAD CONSULTANTS BANGALORE

Rudraprasad consultants

No.3, 7th Main,

Malleswaram Bengaluru-560003

Executive Engineer

Yelahanka Division

Bengaluru

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INTRODUCTION

CHAPTER – 1

INTRODUCTION

Detailed Project Report

1.1 General

India's pride, Bengaluru is nearly 500 years old and has grown from a small time settlement when KempeGowda, the architect of Bengaluru, built a mud fort in 1537 and his son marked the city boundaries by erecting four watch towers. Bangalore is the capital and the largest city of Karnataka. It is also called "Garden City" for its beautiful gardens, flowers and trees which flourish in each and every street. Bangalore is India's third largest city, fifth most populous city and fifth-most populous urban agglomeration. The majority of the city of Bangalore lies in the Bangalore Urban district of Karnataka and the surrounding rural areas are a part of the Bangalore Rural district. In recent days Bangalore has transformed itself from a "pensioners' paradise" to a modern thriving "cosmopolitan metropolis". Today Bengaluru has grown well beyond those four towers into a sprawling metropolis of more than 6 million people and is referred to as the "Silicon Valley" of India.

As a large and growing metropolis, Bangalore is home to many well-recognized colleges and research institutions in India. Numerous public sector heavy industries, software companies, aerospace, telecommunications, and defence organizations are located in the city. Bangalore is also well known as a hub for India's Information Technology sector. It is among the top 10 preferred entrepreneurial locations in the world. Bangalore is a major economic and cultural hub and the second fastest growing major metropolis in India. Today 35 percent of India's software export is done at Bangalore. Rapid population growth in Bangalore was brought about by the IT and other associated industries, leading to an increase in the population to about 1.5 million, with an annual growth rate of 10-14%.every year.

Bangalore today is obviously one of the most sought after cities in the country with the rapid growth in the IT industry and other associated industries the rise in the number of job opportunities in the city. With the rising population in the city there is also a corresponding increase in the number of vehicles in the city. Bangalore's vehicular traffic has increased manifold, with 1.6 million registered vehicles in the city — the second highest for an Indian

city, after New Delhi. Bangalore in particular is that there is very little scope for expansion of roads and the need to use existing roads for smoothmovement of vehicles is even more pronounced. It thus becomes mandatory for the administration to ensure better parking facilities. With the increase in population and the expansion of the city, the problem of connectivity of the populace has arisen. Quite obviously personalized modes of transport have grown at a tremendous rate and two wheelers along with the cars. The maintenance and construction of roads to address the growing traffic in the city has been a challenge to the BDA and the BBMP. Development of the city road infrastructure has revolved around imposing one-way traffic in certain areas, improving traffic flow in junctions, constructing ring roads, bridges, flyovers and other grade separators.

Bangalore's road network exceeds 3,000 km (1,800 mi) and consists of ring roads, arterial roads, sub-arterial roads and residential streets. The city road network is mainly radial, converging in the centre. Many of Bangalore's erstwhile colonial and town streets were developed into commercial and entertainment areas after independence. The B.V.K Iyengar Road became the retail hub of Bangalore, while MG Road, Commercial Street and Brigade Road became important shopping, recreation and corporate areas. But for MG Road, other roads in and around the erstwhile Parade Ground remain narrow, winding roads. The unplanned nature of growth in the city resulted in massive traffic gridlocks that the municipality attempted to ease by constructing a flyover system and by imposing one-way traffic systems. Some of the flyovers and one-ways mitigated the traffic situation moderately but were unable to adequately address the disproportionate growth of city traffic. Some of the flyovers and one-ways mitigated the traffic situation moderately; however the volume of traffic continues to grow at an annual rate of between 7- 10%. The Outer Ring Road was initially constructed to ease truck congestion in the city; however the growth of suburbs reduced the positive impact of the ring road. BDA is laying additional lanes on many of the major roads around Bangalore. The Peripheral Ring Road is designed to be concentric to the Outer Ring Road and covers 108.9 km. The Hosur Road, which connects Bangalore to the Electronics City, is heavily congested and is part of the National Highway (NH7), therefore witnesses' heavy truck traffic as well.

Export Promotional Industrial Park (EPIP) in Bangalore is the place which entrepreneurs love to be identified with. EPIP is in the just next door of M/s ITPL, an internationally acclaimed

technology park promoted by KIADB with TATAs and Singapore consortium of industries. This park comes with state-of-the-art infrastructure facilities. Following are the few of many features of this prestigious location

- Location in unpolluted, lush green atmosphere, just 17 Kms. from the heart of the city and 9 Kms. from Bangalore Airport.
- Total extent of developed land is 547 acres with well-laid asphalted roads & drainage systems.
- Assured water supply & dedicated power lines with Sodium Vapor street lighting.
- KTPO Exhibition Complex coming up in the area. Hospital with ultra modern facilities and well-equipped inland container depots.
- Well connected with public transport with host of secondary infrastructure facilities like telephones, Posts & Telegraph, Banks, ATMs, Convention center. Cafeterias, Travel operators.

EPIPs are the destination for industrial units who have plans to export at least 33% of their output in value offshore. These parks come with well-planned infrastructure, which is hallmark of KIADB's service. These parks are established with the sanction of Union Govt, of India to give impetus to growth of exports in the state. Government of Karnataka offers host of incentives and concessions to export oriented units.

The Bruhat Bengaluru Mahanagara Palike (BBMP, Greater Bangalore Municipal Corporation vide Government of Karnataka Notification no. UDD 92 MNY dt: 2.11.2006) is in charge of the civic administration of the city. It was formed in 2007 by merging 100 wards of the erstwhile Bangalore Mahanagara Palike, with seven neighbouring City Municipal Councils (Rajarajeshwari Nagara, Dasarahalli, Bommanahalli, Krishnarajapuram, Mahadevapura, Byatarayanapura and Yelahanka), one Town Municipal Council (Kengeri) and 111 villages around Bangalore. The BBMP Is run by a city council composed of 250 members, including 198 corporators representing each of the wards of the city. The BBMP works with the Bangalore Development Authority (BDA) and the Agenda for Bengaluru Infrastructure and Development Task Force (ABIDe) to design and implement civic projects.

The BBMP has taken up an ambitious plan to upgrade Arterial & Sub Arterial Road network in these newly added areas of BBMP and Development, maintenance and management of

high quality network in EPIP zone roads at Mahadevapura Zone, where the traffic intensity has increased significantly and to augment the capacity for safe, efficient and free flow of traffic. Roads in and around EPIP zones are being upgraded to arterial road standards which will result in enormous increase in the traffic. Tech city, a preferred choice of many global corporations to position their businesses. It has indeed been a challenge to the government agencies including the urban local bodies to meet up with these unprecedented demands and challenges of the global companies and its citizens demanding international class 'citizen services'.

The project consists of improvements to roads and drains, in Ward 04 of Yelahanka Division, which includes 37 roads. The existing roads need to be improved, since they are not in good condition and to avoid inconvenience to people living in these wards. The total length of all Drains in Ward 04 is 5329 m (5.329 Km), the total length of all Asphalt Roads in Ward 04 is 4670 m (4.670 Km) & the total length of all CC Road of Ward No 04 is 726 m (0.726 Km). . The ward maps in which the respective roads are highlighted are enclosed with this report.

1.2 Topography

Bangalore is situated in the southeast of Karnataka, at an average elevation of 920m above mean sea level. It is positioned at 12.97°N, 77.56°E and covers an area of 2, 190 sq.km. Bangalore Urban District borders with Kolar District in the northeast, Tumkur District in the northwest, Mandya District in the southwest, Chamarajanagar District in the south and the neighboring state of Tamil Nadu in the southeast. The Bangalore Urban District is divided into three taluks; Bangalore North, Bangalore South, and Anekal. The Bangalore North taluk is a relatively level plateau, while the Bangalore South taluk has an uneven landscape with intermingling hills and valleys.

1.3 Project objective

- The main objective of the study is to establish the technical & economical viability of the project roads by rehabilitation, strengthening, asphalting, concrete including culverts and improvements of side drains of the existing roads.
- The detailed project study includes submission of the detailed project report for the project as per standards.

1.4 Outline of the project

The consultant is required to conduct various engineering Surveys, Investigate, Carry out Detailed Design and Viability of the project. **Prepare Detailed Project Report**, based on Detailed Design and Bill of Quantities.

1.5 Contents of Detailed Project Report

This Detailed Project Report is submitted in 8 chapters dealing with different aspect of the study of the project road.

Chapter description

1	Introduction
2	Socio-Economic Profile
3	Description of project
4	Methodology
5	Design Standards
6	Pavement Overlay design
7	Conclusion
8	Cost estimate

DESCRIPTION OF PROJECT ROADS

CHAPTER - 2

DESCRIPTION OF PROJECT ROADS

2.1 General

The project consists of bad roads in Ward No.04, Yelahanka Division, which includes 37 roads in. The existing roads need to be improved since there are formation of Cracks, Rutting and Potholes which are a hindrance to the free movement of traffic, in turn causing inconvenience to the people of the respective wards. The total length of all Drains in Ward 04 is 5329 m (5.329 Km). The total length of all Asphalt Roads in Ward 04 is 4670 m (4.670 Km) & the total length of all CC Road of Ward No 04 is 726 m (0.726 Km). Majority of roads pass through residential and commercial area. Below are the lists of the bad roads in their respective wards.

- **List of Roads**
- **List of Roads in Ward No. 04 (Judicial Layout)**
- **Judicial Layout** - 1st Cross Road
- **Judicial Layout** - 2nd Cross Road
- **Judicial Layout** - 1st Cross Road
- **Judicial Layout** - 1st A Main Road
- **Judicial Layout** - 1st B Main Road (W0475)
- **Judicial Layout** - 1st Main Road (W0497)
- **Judicial Layout** – 8th Main Road
- **Judicial Layout** – 8th Main Road (W0473)
- **Judicial Layout** – 15th A Cross Road (W0384)
- **Judicial Layout** – 3rd Cross Road
- **Judicial Layout** – Cross Road (W0403)
- **Judicial Layout** –3rd A Cross Road
- **Judicial Layout** –2nd Cross Road
- **Judicial Layout** –1st Cross Road
- **Judicial Layout** – Cross Road (W0344)
- **Judicial Layout** – Cross Road (W0383)
- **Judicial Layout** – Cross Road (W0395)

- **Judicial Layout** –1st Cross Road (W0419)
- **Judicial Layout** – Cross Road
- **Judicial Layout** – 9th Main Road
- **Judicial Layout** – 10th Main Road
- **Judicial Layout** – 13th Main Road
- **Judicial Layout** – 13th Main Road
- **Judicial Layout** – 13th Main Road
- **Judicial Layout** – 28th Cross Road
- **Judicial Layout** – W0337
- **Judicial Layout** – W0337
- **Judicial Layout** –7th Cross Road
- **Judicial Layout** –7th Cross Road
- **Judicial Layout** – 12th Main Road
- **Judicial Layout** – 13tn Main Road
- **Judicial Layout** – 21st Cross Road
- **Judicial Layout** – 15th Cross Road

2.2 Existing project roads

2.2.1 Terrain

Terrain is classified by general slope of the country across the alignment, based on this criterion majority of the project roads pass through Plain terrain.

2.2.2 Alignment

The existing roads have the carriage widths varying from 2.8 m to 8.5 m and the existing gradients of the project roads are within acceptable limits as per IRC: 86. Table 1 shows the list of project roads with their carriage way widths.

2.2.3 Climate

Due to its elevation, Bangalore enjoys a pleasant climate throughout the year, with temperatures ranging between 33°C and 16°C, with an average of 24°C. The summer heat is moderated by occasional thunderstorms and squalls. Bangalore receives adequate rainfall of

about 860 mm from the Northeast Monsoon as well as the Southwest Monsoon. The wettest months are August, September and October.

2.2.4 Carriageway Width

The existing carriageway width varies from 2.8 m to 8.5 m. Details of carriageway width are as shown in Table 2.1 below,

Table 2.1 - LIST OF ROADS WITH THEIR CARRIAGE WAY WIDTHS

Sl.No	Name of the Road	Carriage Way Width in m
Ward No.04		
1st & 2nd Cross Judicial Layout		
1.	1st Cross Road	6.0
2.	2nd Cross Road	6.5
3.	1st Cross Road	5.2
7th Cross & 1st Main Judicial Layout		
4.	1st A Main Road	5.7
5.	1st B Main Road (W0475)	5.1
6.	1st Main Road (W0497)	6.5
9, 12 & 13th Main Judicial Layout		
7.	9th Main Road	7.1
8.	10th Main Road	7.0
9.	13th Main Road	6.4
10.	1st Cross Road	6.6
22, 23 & 24th Cross Judicial Layout		
11.	W0337	8.5
12.	W0337	7.0
13.	7th Cross Road	9.3
14.	12th Main Road	5.0
15.	13tn Main Road	4.8
16.	21st Cross Road	4.4
17.	15th Cross Road	5.8
Someshwara Nagara		

18.	13th Main Road	4.8
19.	13th Main Road	6.0
20.	28th cross Road	6.5
21.	13th Main Road	6.4
Sandeep Unnikrishnan Road		
22.	2nd B Cross Road	6.9
23.	10th B Main Road	5.8
24.	Cross Road	6.0
8th Main Judicial Layout		
25.	8th Main Road	6.0
26.	8th Main Road (W0473)	5.5
27.	15th A Cross Road (W0384)	8.0
Allalsandra Village		
28.	3rd Cross Road	3.0
29.	Cross Road (W0403)	3.5
30.	3rd A Cross Road	3.6
31.	2nd Cross Road	3.5
32.	1st Cross Road	3.5
33.	Cross Road (W0344)	3.0
34.	Cross Road (W0383)	2.8
35.	Cross Road (W0395)	3.2
36.	Cross Road	3.7
37.	1st Cross Road	5.4

2.2.5 Pavement Condition

The existing pavement conditions are analyzed based on visual inspection as per IRC 81-1997 Table -1. The Roads as per the Visual Inspection were found to be in Good to Poor condition. This may be due to improper material in subgrade, compaction or movement of heavily loaded trucks. The summaries of pavement condition obtained by visual inspection are listed in Table 2.2 below.

TABLE 2.2: PAVEMENT CLASSIFICATION BASED ON VISUAL INSPECTION

Sl.No	Name of the Road	Road Condition
Ward No.04		
1st & 2nd Cross Judicial Layout		
1.	1st Cross Road	Poor
2.	2nd Cross Road	Poor
3.	1st Cross Road	Poor
7th Cross & 1st Main Judicial Layout		
4.	1st A Main Road	Poor
5.	1st B Main Road (W0475)	Poor
6.	1st Main Road (W0497)	Poor
9, 12 & 13th Main Judicial Layout		
7.	9th Main Road	Poor
8.	10th Main Road	Poor
9.	13th Main Road	Poor
10.	1st Cross Road	Poor
22, 23 & 24th Cross Judicial Layout		
11.	W0337	Poor
12.	W0337	Poor
13.	7th Cross Road	Poor
14.	12th Main Road	Poor
15.	13tn Main Road	Poor
16.	21st Cross Road	Poor
17.	15th Cross Road	Poor
Someshwara Nagara		
18.	13th Main Road	Poor
19.	13th Main Road	Poor
20.	28th cross Road	Poor
21.	13th Main Road	Poor
Sandeep Unnikrishnan Road		
22.	2nd B Cross Road	Poor
23.	10th B Main Road	Poor
24.	Cross Road	Poor
8th Main Judicial Layout		

25.	8th Main Road	Poor
26.	8th Main Road (W0473)	Poor
27.	15th A Cross Road (W0384)	Poor
Allalsandra Village		
28.	3rd Cross Road	Poor
29.	Cross Road (W0403)	Poor
30.	3rd A Cross Road	Poor
31.	2nd Cross Road	Poor
32.	1st Cross Road	Poor
33.	Cross Road (W0344)	Poor
34.	Cross Road (W0383)	Poor
35.	Cross Road (W0395)	Poor
36.	Cross Road	Poor
37.	1st Cross Road	Poor

2.2.6 Land Use along the project highway

Land use along majority of roads is predominantly for built up area. The settlements are used for residential and commercial purposes.

2.3 Traffic flow conditions

Traffic on these project roads is of mixed type. Majority of roads only carry passenger vehicle most of the time, and there are also commercial vehicles ply on some roads. Commercial vehicles include 2-axle and 3-axle trucks and LCVs.

The intensity of traffic on this stretch is likely increase in future, the reason being:

- The Bangalore Mahanagara Palike became Bruhat Bangalore Mahanagara Palike after inclusion of 7 CMC, 1TMC & 111 Villages adjoining to the CMC areas vide Government of Karnataka Notification No. UDD 92 MNY 2006 dated 02.11.2006. To provide better transport facility, to improve the quality of urban civic services better roads are needed. At present the existing roads in these newly added areas are narrow without proper Drainage, Footpath, and Culverts etc. The BBMP has taken up an

ambitious plan to upgrade Arterial & Sub Arterial Road network in these newly added areas of BBMP in view of providing better infrastructure.

- Roads in and around EPIP zones are being upgraded to arterial road standards which will result in enormous increase in the traffic.
- The number of commercial and residential plots in the given area is high.
- Rising traffic congestion is one of the key issues in the City. Though the length of roads available is good, the problem lies with the restricted widths.

2.4 Cross Drainage Structures and Side Drains

There are no major CD structures along the project road except for the cross roads. The condition of the existing CD structures is good.

2.5 Utilities

- **HT Lines**

  HT lines do not cross along the project roads

- **Light Poles**

  Large numbers of light poles are present along the project roads in regular intervals

2.6 Trees

The project roads consist of trees beside the carriageway at regular intervals. Also tree pits are constructed for all the trees on either side of the roads for watering the trees. Curb stones are laid all round the tree pits for protection

CONCLUSION

CHAPTER - 3

CONCLUSIONS

3.1 General

The primary data collected from the site provides a clear picture of the site conditions, and also gives us a good insight about the deficiencies and the scope for improvements. The primary data coupled with the good engineering expertise lead us in giving apt and economical recommendations for the improvements. A budget of Rs. 20,00,00,000/- (Rs. Twenty Crore Only) has been allocated for this project. Hence, the provisions of items made in the cost estimate are in consensus with the allocated budget. The improvement proposal includes the following:

3.1.1. Geometric Improvements:

- Improvements of existing carriageway
- Improvements to cross sectional elements
- Improvements to horizontal alignment
- Improvements to longitudinal profile

3.1.2. Strengthening of Existing Pavements:

- **Pavement Overlay design**
- Road Drainage
- Road Furniture and Appurtenances
- Pedestrian Facilities
- Aesthetics

The summary of improvement proposals along the project roads in Ward no.04 Conforming to Design Standards with all the Relevant Details such as Length and Width of existing roads, Plans and Construction Costs has been prepared. The details of improvement proposals are discussed in subsequent sections.

3.2. Improvement proposal for Carriageway

Since the majority of the roads are Arterial and sub-arterial roads where the Traffic intensity is less than 10msa, Table 3.1 shows the improvement proposals and pavement composition for the existing roads.

TABLE 3.1: IMPROVEMENT PROPOSAL AND PAVEMENT CONDITION DETAILS

FLEXIBLE PAVEMENT

Sl.No	Name of the Road	BC
Ward No.04		
1st & 2nd Cross Judicial Layout		
1.	1st Cross Road	40
2.	2nd Cross Road	40
3.	1st Cross Road	40
7th Cross & 1st Main Judicial Layout		
4.	1st A Main Road	40
5.	1st B Main Road (W0475)	40
6.	1st Main Road (W0497)	40
9, 12 & 13th Main Judicial Layout		
7.	9th Main Road	40
8.	10th Main Road	40
9.	13th Main Road	40
10.	1st Cross Road	40
22, 23 & 24th Cross Judicial Layout		
11.	W0337	40
12.	W0337	40
13.	7th Cross Road	40
14.	12th Main Road	40
15.	13tn Main Road	40
16.	21st Cross Road	40
17.	15th Cross Road	40
Someshwara Nagara		

18.	13th Main Road	40
19.	13th Main Road	40
20.	28th cross Road	40
21.	13th Main Road	40
Sandeep Unnikrishnan Road		
22.	2nd B Cross Road	40
23.	10th B Main Road	40
24.	Cross Road	40
8th Main Judicial Layout		
25.	8th Main Road	40
26.	8th Main Road (W0473)	40
27.	15th A Cross Road (W0384)	40

TABLE 7.2: IMPROVEMENT PROPOSAL AND PAVEMENT CONDITION DETAILS

RIGID PAVEMENTS

Sl.No	Name of the Road	PQC	DLC
Ward No.04			
Allalsandra Village			
1.	3rd Cross Road	150	150
2.	Cross Road (W0403)	150	150
3.	3rd A Cross Road	150	150
4.	2nd Cross Road	150	150
5.	1st Cross Road	150	150
6.	Cross Road (W0344)	150	150
7.	Cross Road (W0383)	150	150
8.	Cross Road (W0395)	150	150
9.	Cross Road	150	150
10.	1st Cross Road	150	150

3.3. Improvement Proposal for Side Drains

Adequate drainage is a primary requirement for maintaining the structural soundness and functional efficiency of a road in addition to preserving the valuable road assets created. Pavement structure including subgrade must be protected from any ingress of water, otherwise over a period of time it may weaken the sub grade by saturating it and cause distress in the pavement structure. Hence, rapid dispersal of water from pavement and sub grade is a basic consideration in road design. Also, quick drainage takes away the water from pavement's surface and reduces chances of skidding of vehicles.

The requirements of road drainage are essentially based on IRC: SP-42-" Guidelines on Road Drainage" and IRC:SP-50 -"Guidelines on Urban Drainage". Camber of 3.0 is provided for the carriageway. For longitudinal drains, a minimum longitudinal gradient of 0.3 percent shall be ensured for satisfactory drainage.

3.4. Improvements Related to Utility, Road Furniture and Appurtenances

Utility and Importance of the Road are greatly enhanced by installing Road Furniture and Appurtenances at appropriate locations along the Project Road, which ensures Improved Road Safety. Planning and Design of Road Furniture and Appurtenances are as per the Guidelines stipulated in IRC. Detailing of each of these Components has been done so that to integrate the same with the Road Improvement Scheme.

COST ESTIMATES

CHAPTER - 4

COST ESTIMATES

4.1. Detailed Cost Estimate

Detailed cost estimate for various works listed in "Construction of Synthetic Tennis Court, Street Vending Zone & Other Developmental Works at Judicial Layout Main and Cross Roads, Chikkabommasandra, Someshwara Nagar, Allalasandra Village and Surrounding Areas in Ward No 04 of Yelahanka Division Under Amruth Nagarothan Grants. (PACKAGE No-06)" has been worked out based on detailed engineering design.

4.2. General

Cost Estimate is an important part of the DPR as it provides vital input to financial evaluation of the project. The cost estimates have been prepared for strengthening of the existing road, repairs and improvements to longitudinal drains, road furniture and appurtenances.

4.3. Basic rates

As part of Detailed Project Report, Rate Analysis of each of the item has been prepared by adopting PW, P & IWTD SR 2018-19, PWD SR 2021-22 Bangalore Circle. The rates as given in PW, P & IWTD SR are to be enhanced by 6% for additional weight age for the works to be executed under extra ordinary conditions for Bangalore Metropolitan Limits. Items not covered in NHSR / PW, P & IWTD SR have been based on market rates.

4.4. Utility Relocation

Provision of 1.5% of Construction cost is made in the cost estimated for raising and or shifting electric supply lines, telephone lines, OFC lines and other utilities.

4.5. Project Management and Quality Control

Provision of 2.0% of Construction Cost has been made towards Cost of DPR Preparation, PMC and Proof Checking.

4.6. Project Cost

The total project cost for ***Preparation of DPR for*** "Construction of Synthetic Tennis Court, Street Vending Zone & Other Developmental Works at Judicial Layout Main and Cross Roads, Chikkabommasandra, Someshwara Nagar, Allalasandra Village and Surrounding Areas in Ward No 04 of Yelahanka Division Under Amruth Nagarothan Grants. (PACKAGE No-06)" is 20,00,00,000.00 and the Detailed Cost Estimate is enclosed.

Sl.No	Description of Item	Unit	No	Length (m)	Breadth (m)	Depth (m)	Quantity	Rate Rs	Amount Rs
								Miscellenious and rounding	5616.00
								Grand Total	**200000000.00**
								RUPEES TWENTY CORE ONLY	

CERTIFICATE:

1) The work spot has been inspected and found to be necessary
2) The work spot comes under B.B.M.P
3) The provisions made in the estimate are necessary and minimum.
4) The estimate is based on C.S.R of 2021-22, 2018-2019, PWD Electrical Sr 2021-2022 Data Rates and approved rates.

Assistant Engineer
BBMP

Assistant Executive Engineer
BBMP

Executive Engineer
BBMP

RUDRAPRASAD CONSULTANTS BANGALORE

Technical Sanction
Accorded For 2000.00 Lakhs.
Head of A/C P-3877
CER NO 26 Dt: 21/6/22

Administrative Sanction for Rs. 2000.00 Lakhs
Rupees Twenty Crores Only
is accorded under head P:3877
Amruth Nagarothana Grants
Registered as CE No. 28 Subject
to conditions contained in enclosed memo
No BBMP/EE/VNK-01/AS/28/2223 Dt. 18/8/2022

Executive Engineer

DRAFT TENDER SCHEDULE

BRUHAT BANGALORE MAHANAGARA PALIKE

Name of Work:Construction of Synthetic tennis court,street vending zone & other developmental works at judicial layout main and cross roads,Chikkabommasandra, Someshwara nagar,Allalasandra village & surrounding areas in ward No-04 of yelahanka Division under Amruth Nagarothan Grants(Package No-06)

DRAFT TENDER SCHEDULE

Item No	Description of Work	Unit	Total Quantity as per Estimation	Rate as per estimate in Rs.	
				In Figures	In Words
1	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead I By Manual Means B Cement Concrete Grade M-15 & M-20 and directions of the Engineer in charge.	Cum	28.24		
2	Dismantling of existing structures like culverts, bridges, retaining walls and other structure comprising of masonry, cement concrete, wood work, steel work, including T&P and scaffolding wherever necessary, sorting the dismantled material, disposal of unserviceable material and stacking the serviceable material with all lifts and lead (iii) Dismantling Stone Masonry B Rubble stone masonry in cement mortar. and directions of the Engineer in charge.	Cum	40.50		
3	Removing and refixing stone slabs of drains and pointing in CM (1:3) and directions of the Engineer in charge.	Sqm	1168.94		
4	Removing and refixing of footpath slab (Data Rate) and directions of the Engineer in charge.	Sqm	2467.12		
5	Earth work excavation by manual means for drains,canals, waste weir, draft, approach channels, key trenches, foundation of bridges and such simillar works in all kinds of soils , as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter, excavated surface leveled and sides neatly dressed disposing off the excavated stuff or sorting & stacking the selected stuff for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools & other appurtenaces required to complete the work. and directions of the Engineer in charge.	Cum	9215.62		
6	Providing granite slabs of selected quality roughly dressed havinf a size of 7.5cms thick and fixed in cement mortar (1:6) including fixing curing etc., complete and directions of the Engineer in charge. and directions of the Engineer in charge.	Sqm	191.97		
7	Providing one line dressing to granite stone slab / granite stone masonry as per specifications as directed by the Engineer in Charge of the work. (excluding GST and Area Leading Charges)(Data Rate) and directions of the Engineer in charge.	Sqm	721.01		
8	Providing and laying in position plain cement concrete Mix 1:3:6 (M10) for levelling course for all works in foundation. Using 40 mm nominal size graded crushed coarse aggregates and fine aggregates as per relevant IS Codes machine mixed, laid in layers not exceeding 150 mm thickness, well compacted using plate vibrators, including all lead & lifts, cost of all materials of quality, labour, Usage charges of machineries, curing, and all the other appurtenances required to complete the work as per technical specifications. and directions of the Engineer in charge.	Cum	1511.42		
9	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. M20 (The cost of steel reinforcement & formwork to be paid separately)and directions of the Engineer in charge.	Cum	2146.25		
10	Supplying, Fitting and Placing TMT Fe550 bar Reinforcement in sub-structure complete as per Drawing and Technical Specifications. and directions of the Engineer in charge.	tonne	132.87		
11	Providing and Fixing pre cast covering Slab 100mm thick made out of CC , Jelly 20mm Down Size with steel reinforcement including form work, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc, complete as per Engineer incharge. (Data Rate) and directions of the Engineer in charge.	Sqm	5961.71		
12	Providing and Fixing pre cast covering Slab 150mm thick made out of CC , Jelly 20mm Down Size with steel reinforcement including form work, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc, complete as per Engineer incharge. (Data Rate) and directions of the Engineer in charge.	Sqm	289.80		
13	Providing and Fixing pre cast covering Slab 230mm thick made out of CC , Jelly 20mm Down Size with steel reinforcement including form work, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc, complete as per Engineer incharge. (Data Rate) and directions of the Engineer in charge.	Sqm	346.56		

Item No	Description of Work	Unit	Total Quantity as per Estimation	Rate as per estimate in Rs.	
				In Figures	In Words
14	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. (The cost of steel reinforcement & formwork to be paidseparately) Mix 1:2:4 (M15) Using 20 mm nominal size graded crushed coarse aggregates and directions of the Engineer in charge.	Cum	390.18		
15	Providing and fixing pre cast solid cement concrete Kerb Stones made out of M20 with top and bottom width 114 and 165mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting including formwork, curing, including cost of materials, labour charges of machinery, loading, unloading, lead and lift transportion etc., complete as directed by the Engineer in charge of the work(from finish concrete and no painting to be done)(Data Rate) and directions of the Engineer in charge.	Nos	19802.00		
16	Painting Two Coats on New Concrete Surfaces Painting two coats after filling the surface with synthetic enamel paint in all shades on new plastered concretesurfaces. and directions of the Engineer in charge.	Sqm	3118.15		
17	Providing and laying in position Reinforced cement concrete for all Sub structures of building, Irrigation works, Sub structure works of bridges, Drain works & other parallel works from 0.50m to 3.50 m height. The granite/trap/basalt crushed graded coarse aggregates and fine aggregates as per relevant IS Codes machine mixed with super plasticisers, laid in layers, well compacted using needle vibrators, providing weep holes wherever necesary, including all lead & lifts, cost of all materials of quality, confirming to the requirements of relevant IS codes, labour, Usage charges of machinery, curing and all other appurtenances required to complete the work as per technical specifications. M20 (The cost of steel reinforcement & formwork to be paid separately) and directions of the Engineer in charge.	Cum	213.14		
18	Providing and laying heavy duty cobble stones 60mm thick interlock pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per m2 over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level , including cost of materials, labour and Usage charges of machinery complete as per specifications. and directions of the Engineer in charge.	Sqm	3772.72		
19	Providing and laying heavy duty cobble stones 75mm thick interlock pavers, using cement and course sand for manufacture of blocks of approved size, shape and colour with a minimum compressive strength of 281 kg per m2 over 50mm thick sand bed (average thickness) and compacting with plate vibrator having 3 tons compaction force thereby forcing part of sand underneath to come up in between joints, final compaction of paver surface joints into its final level, including cost of materials, labour and Usage charges of machinery complete as per specifications. and directions of the Engineer in charge.	Sqm	1194.40		
20	Dismantling of cement concrete pavement by mechanical means using pneumatic tools, breaking to pieces not exceeding 0.02 m3 in volume and stock piling at designated locations and disposal of dismantled materials and stacking serviceable and unserviceable materials separately MORTH Specification and directions of the Engineer in charge.	Cum	535.58		
21	Earth work in surface excavation by mechanical means for lowering & leveling the ground for all works other than foundation in all kinds of soils & upto depth not exceeding 300mm as per drawing and technical specifications, including setting out, shoring, strutting, barricading, caution lights, removal of stumps and other deleterious matter including dressing of excavated surfaces, disposing off or levelling the excavated earth or sorting & stacking the selected earth for reuse in a radius of 50 m and lift upto 1.5 m including cost of labour, tools, usage of machinery & other appurtenances required to complete the work. In all kinds of soils upto 300 mm depth. and directions of the Engineer in charge.	Cum	3109.42		
22	Scarifying the existing bituminous road surface to a depth of 50 mm and disposal of scarified material by Mechanical Means using Hydraulic excavator with in all lifts and lead and directions of the Engineer in charge.	Sqm	1353.30		
23	Construction of Granular Sub-Base of required grading as per design mixing in a mechanical mix plant at OMC, carriage of mixed Material to work site, spreading in uniform layers with motor grader on prepared surface and compacting with vibratory power roller to achieve the desired density, complete as per clause 401 (For Grading -V Material) and directions of the Engineer in charge.	Cum	206.52		
24	Providing, laying, spreading and compacting graded stone aggregate to wet mix macadam specification including premixing the Material with water at OMC in mechanical mix plant carriage of mixed Material by tipper to site, laying in uniform layers with paver/grader in sub-base / base course on well prepared surface and compacting with vibratory roller to achieve the desired density Specification and directions of the Engineer in charge.	Cum	2788.72		